Claims

1-29 (canceled).

30. (currently amended) A fluid circuit for a blood treatment system, comprising:

a blood filter or dialyzer with a blood circuit and a replacement fluid container with a replacement fluid circuit connected to said blood circuit for diluting blood;

said blood circuit communicating with a blood side of said blood filter or dialyzer ~~having~~ and having at least one patient access port connected to said replacement fluid container to define a recirculation path;

a port on a non-blood side of said filter or dialyzer connectable to a source of replacement fluid;

said recirculating path being entirely hermetically isolated from an outside of said fluid circuit except by a flow path through a membrane of said filter or dialyzer from said non-blood side to said blood side such that replacement fluid may be added to said replacement fluid container through said filter or dialyzer membrane and stored therein and a flow through said recirculating path may be established without making any connections or disconnections breaking said hermetic seal.

31. (currently amended) A fluid circuit as in claim [[16]] 30, wherein said replacement fluid circuit is connected to said blood circuit, said patient access port is connected to said replacement fluid container by at least one access line, and said recirculating path is defined by at least a portion of each of said blood circuit, said access line, and said replacement fluid container and said replacement fluid circuit

32. (currently amended) A fluid circuit as in claim [[17]] 31, wherein said access line includes two tubes making a parallel connection between said blood circuit and said replacement fluid container

33. (currently amended) A fluid circuit as in claim [[16]] 30, wherein said replacement fluid circuit includes an inline component including at least one of an inline filter effective to block pyrogens and/or air and a fluid property sensor connectable to a controller or alarm.

34. (currently amended) A fluid circuit as in claim [[19]] 33, wherein said inline component is located immediately upstream of a junction with said blood circuit

35. (currently amended) A fluid circuit as in claim [[20]] 34, wherein said inline component includes filter effective to reduce endotoxins to a rate of less than 3 EUs/ml.

36. (currently amended) A fluid circuit as in claim [[16]] 30, wherein said recirculating path includes an access needle.

37. (currently amended) A fluid circuit as in claim [[22]] 36, wherein said access needle forms part of a connector connecting said replacement fluid container via said access line to said blood circuit, said connector having a portion that automatically seals said access line when disconnected to make said access needle available for accessing the blood flow of a patient in preparation for treatment

38. (currently amended) A fluid circuit as in claim [[16]] 30, wherein said replacement fluid container has ports forming part of said recirculation path, said ports being arranged to prevent short-circuit flow therebetween, whereby bubbles may settle out of said recirculating flow into said replacement fluid container

39. (currently amended) A fluid circuit as in claim [[24]] 38, wherein said replacement fluid container is at least 5 [[l.]] liters in volume.

40-43 (canceled)

44. (new) A fluid circuit for a blood treatment system, comprising:

a blood circuit with a sterile container in fluid communication therewith;

a non-blood circuit;

a blood filter or dialyzer connecting said blood circuit with said non-blood circuit;

said blood filter or dialyzer having a membrane with a blood side and a non-blood side;

said membrane blood side being in fluid communication with said blood circuit;

said membrane non-blood side being in fluid communication with said non-blood circuit;

said blood circuit including venous and arterial lines, each connected to said sterile container by releasable connectors configured for connection to a patient access device;

said blood circuit, said non-blood circuit, said non-blood side of said blood filter or dialyzer, and said container being entirely hermetically isolated from an outside of said fluid circuit except by a flow path through a membrane of said filter or dialyzer, permanently connected, and free of releasable connectors such that fluid may be added to an interior of said sterile container only through said membrane, through said venous and arterial lines only after a seal of said releasable connectors is broken;

said releasable connectors being pre-connected when said fluid circuit is sterilized so that said sterile container may be filled by pumping fluid through said membrane without a possibility of touch contamination until a disconnection of said releasable connectors is made to connect said releasable connectors to a patient access.

45. (new) A fluid circuit for a blood treatment system, comprising:

a blood circuit with a sterile container in fluid communication therewith;

a non-blood circuit;

a blood filter or dialyzer connecting said blood circuit with said non-blood circuit;

said blood filter or dialyzer having a membrane with a blood side and a non-blood side;

said membrane blood side being in fluid communication with said blood circuit;

said membrane non-blood side being in fluid communication with said non-blood circuit;

said blood circuit including venous and arterial lines being releasably connected to said sterile container by at least one connector that is configured for connection to a patient access device;

said blood circuit, said non-blood circuit, said non-blood side of said blood filter or dialyzer, and said container being entirely hermetically isolated from an outside of said fluid circuit except by a flow path through a membrane of said filter or dialyzer, permanently connected, and free of releasable connectors such that fluid may be added to an interior of said sterile container only through said membrane, through said venous and arterial lines only after a seal of said releasable connectors is broken;

said at least one connector being pre-connected when said fluid circuit is sterilized so that sterile container may be filled by pumping fluid through said membrane without a possibility

of touch contamination until a disconnection of said releasable connectors is made to connect said releasable connectors to a patient access.

46. (new) A fluid circuit, comprising:

a dialyzer with a membrane having blood and dialysate sides separated by a membrane;

said dializer being connected to a blood circuit on said blood side and a dialysate circuit on said dialysate side;

a sterile container being connected to the blood circuit;

at least one patient access port connected to the sterile container to define a recirculation path,

a port on a non-blood side of the dialyzer connectable to a source of dialysate;

said recirculating path being entirely hermetically isolated from an outside of the fluid circuit except by a flow path through a membrane of the filter or dialyzer from the non-blood side to the blood side such that dialyste fluid may be added to the sterile container dialyzer membrane and stored therein;

where a flow through the recirculating path may be established without making any connections or disconnections breaking the hermetic seal.

47. (new) A circuit as in claim 45, wherein said access port includes a patient access device.

48. (new) A circuit as in claim 46, wherein said access device includes a dual lumen access needle.